Lagrangian Float Observations in SPURS

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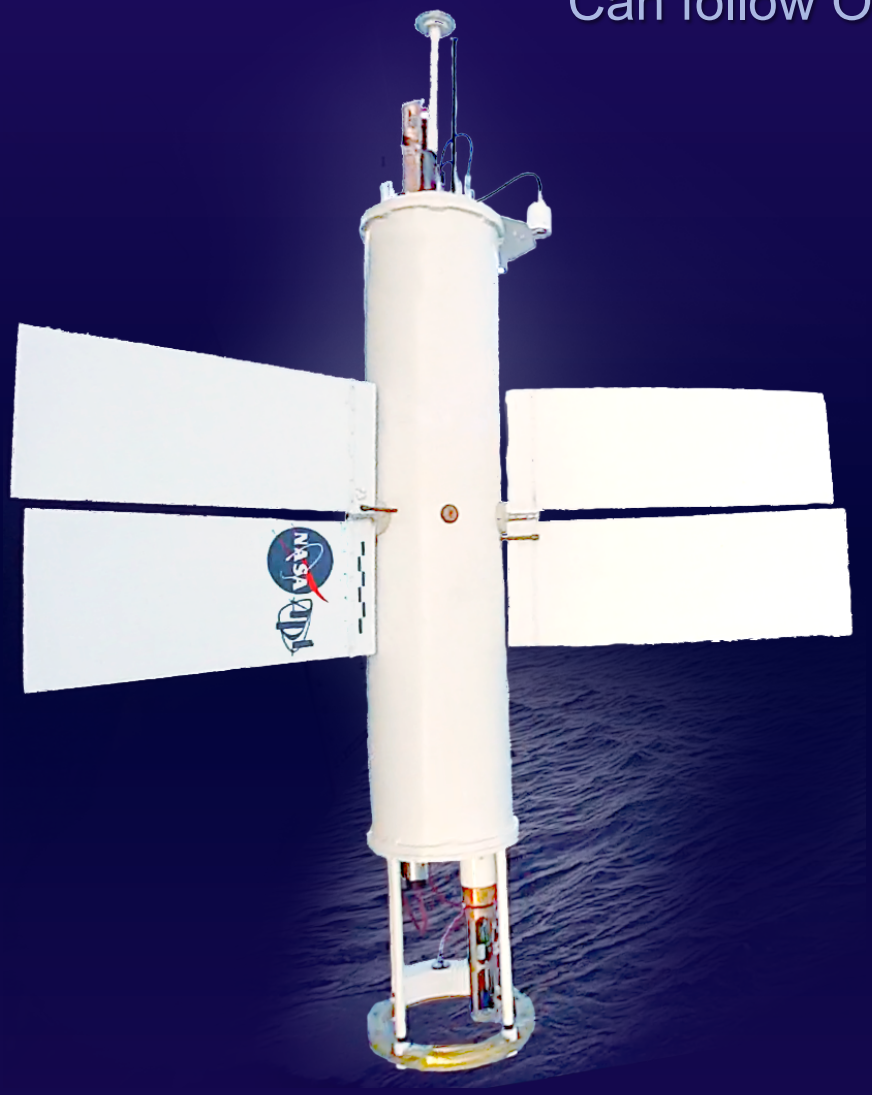
Mixed-layer Lagrangian Float (MLF)

Can follow O(10m) turbulence



2 x CTD + surface Salinity

2 x Pressure

Ambient noise spectra

Buoyancy control accurate to 1g

"Wings" for drag

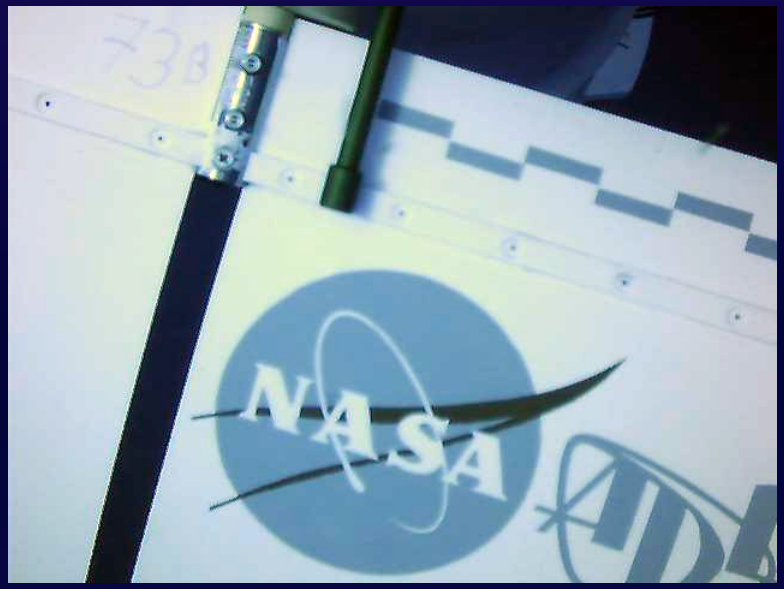
Iridium + GPS

Camera

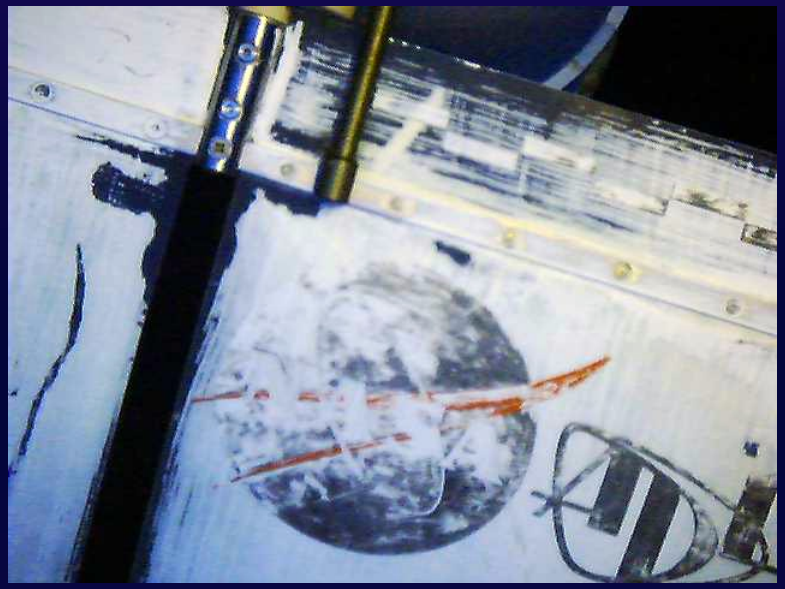
Aggressive anti-fouling

120 days at sea

Anti-fouling paint ablating, but no growth (yet)



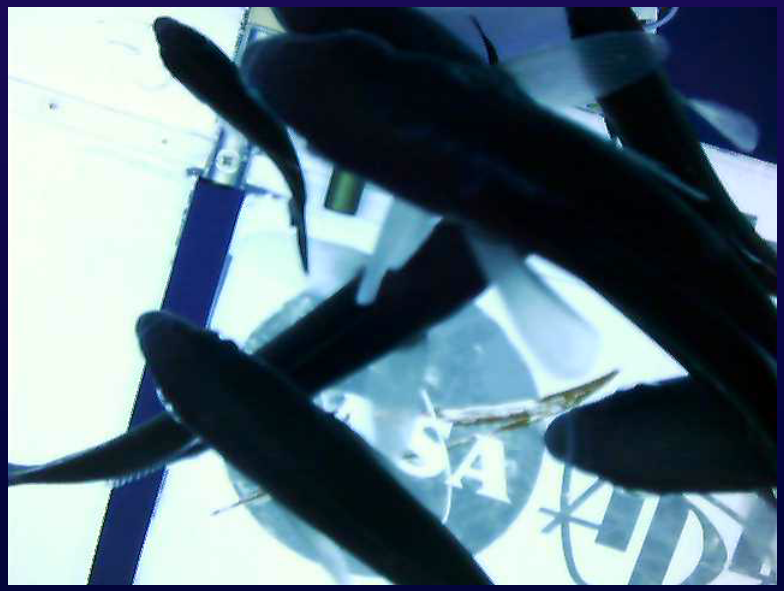
Day 1



Day 120

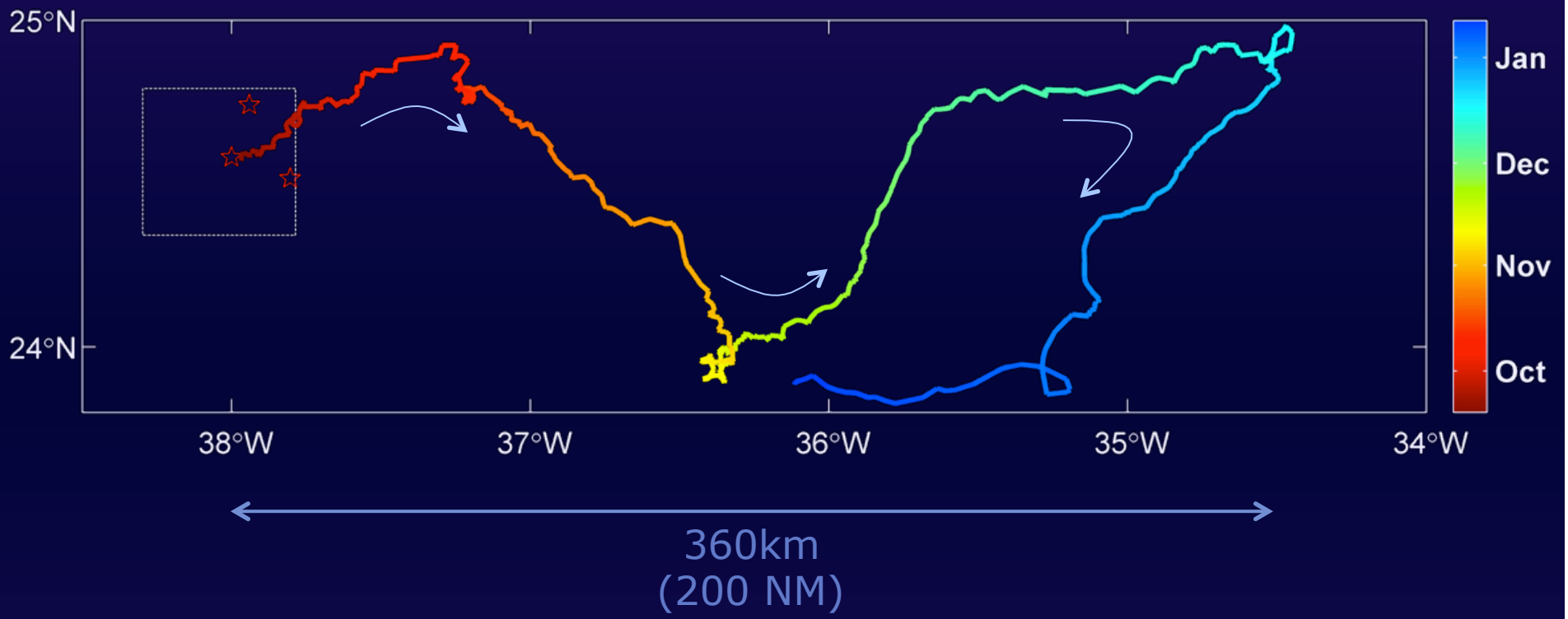
Main problem: fish

Affect ballasting at night. Mostly gone now.



MLF drift Sep-Jan

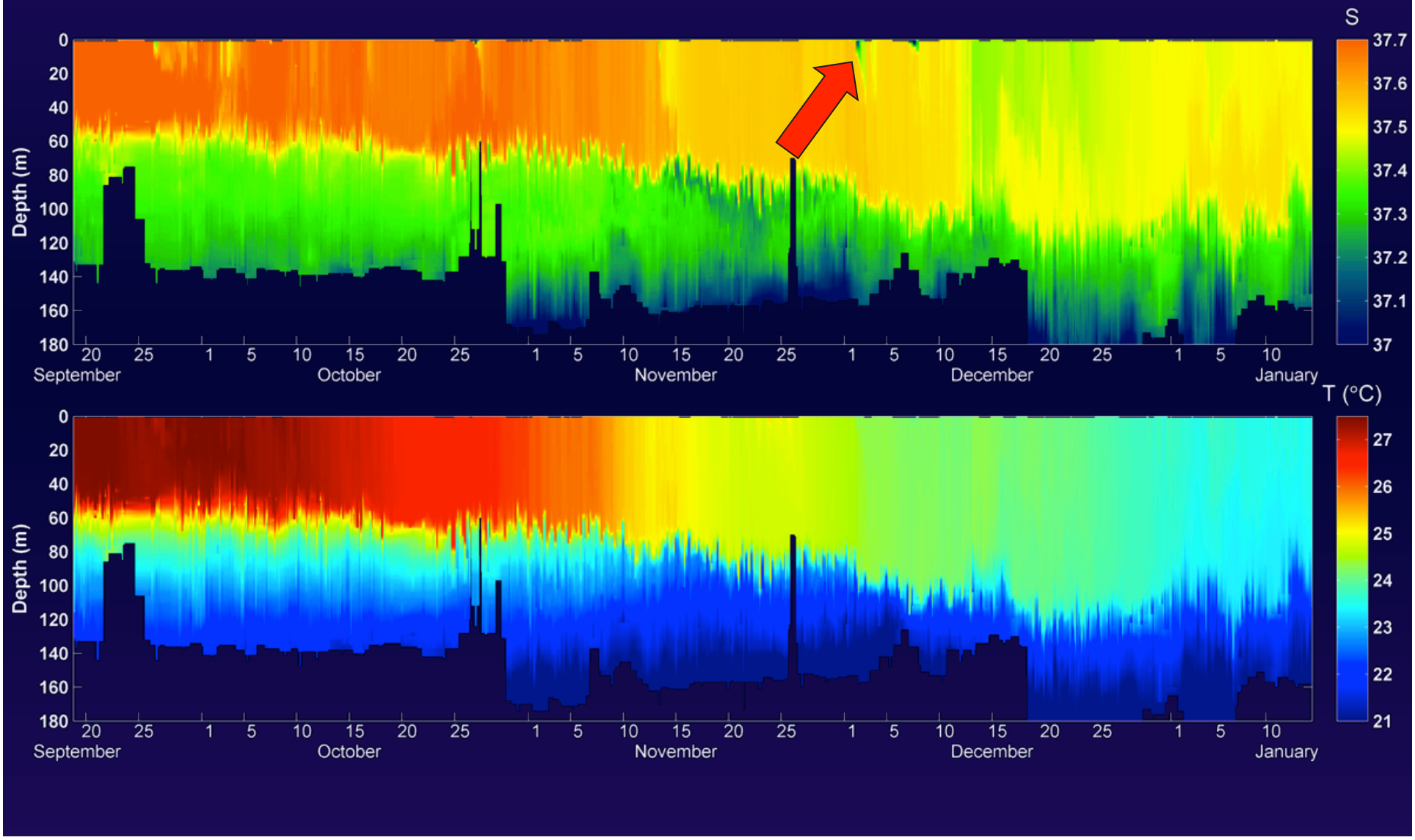
200 NM by mid-December. Half-way back now.



360km
(200 NM)

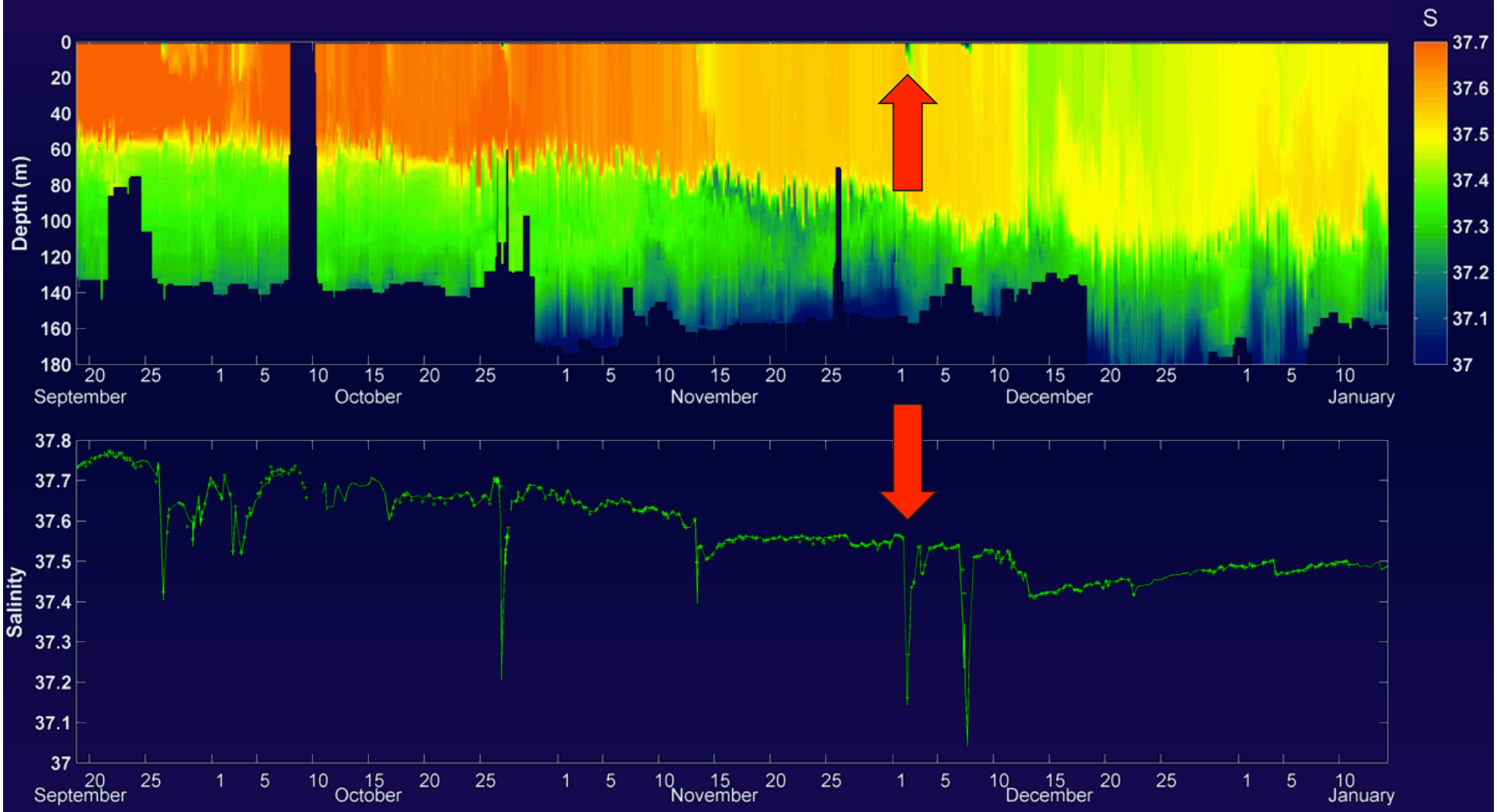
Thermohaline structure evolution

~ 4 profiles a day, more as needed



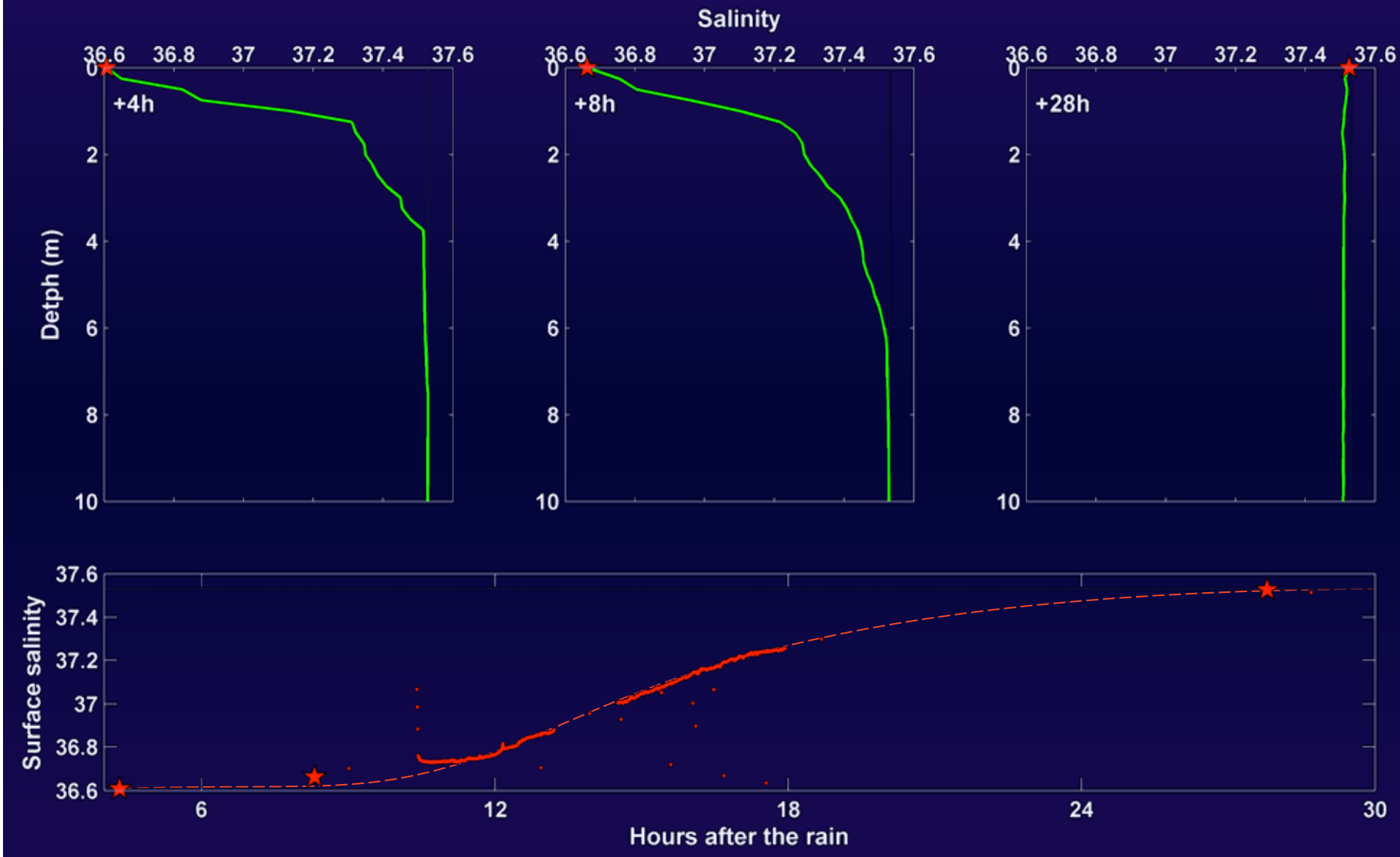
When it rains, it pools

Transient freshwater pools associated with local rain events

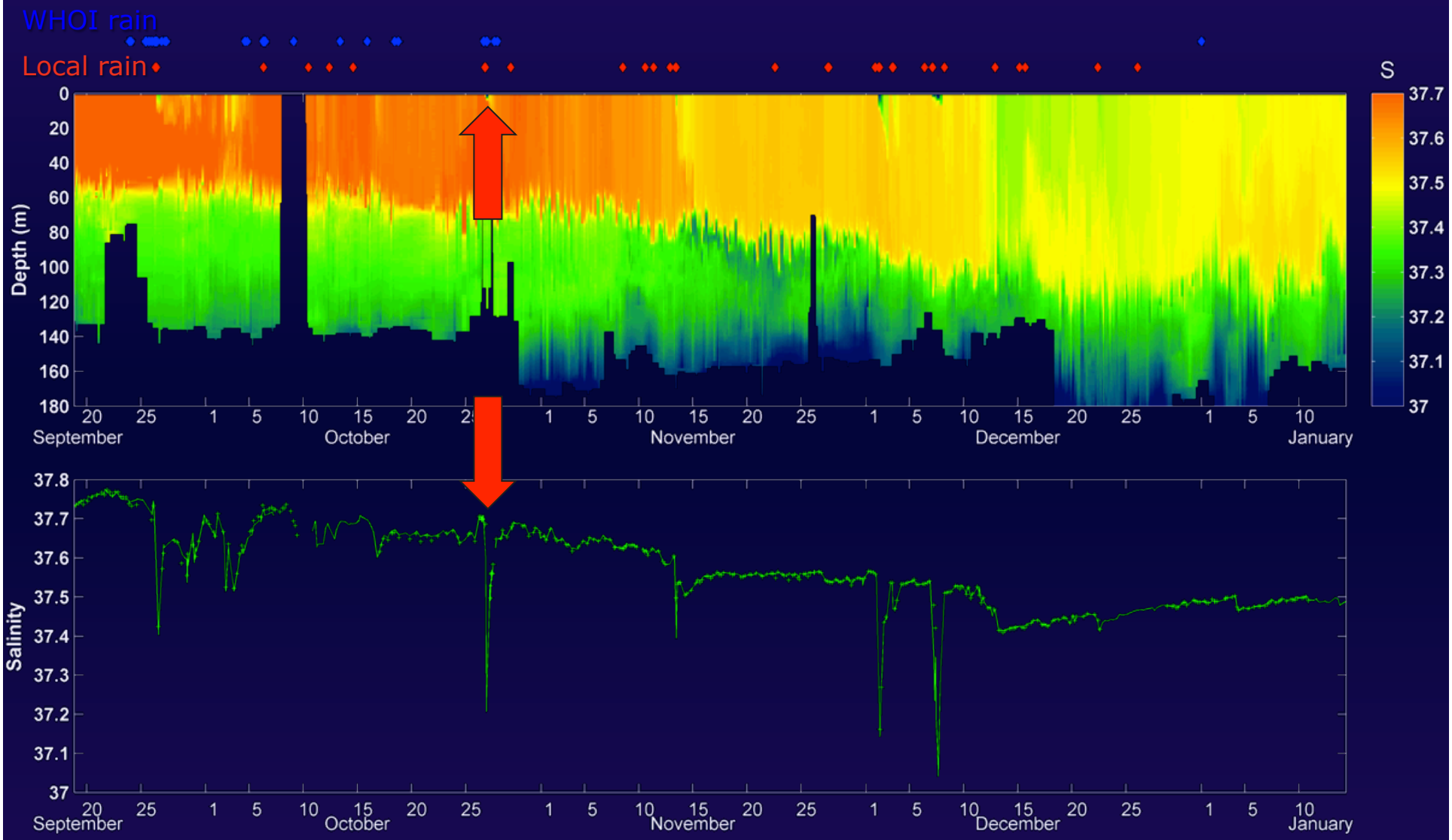


Fresh pool evolution

Fresh water is mixed away in a day

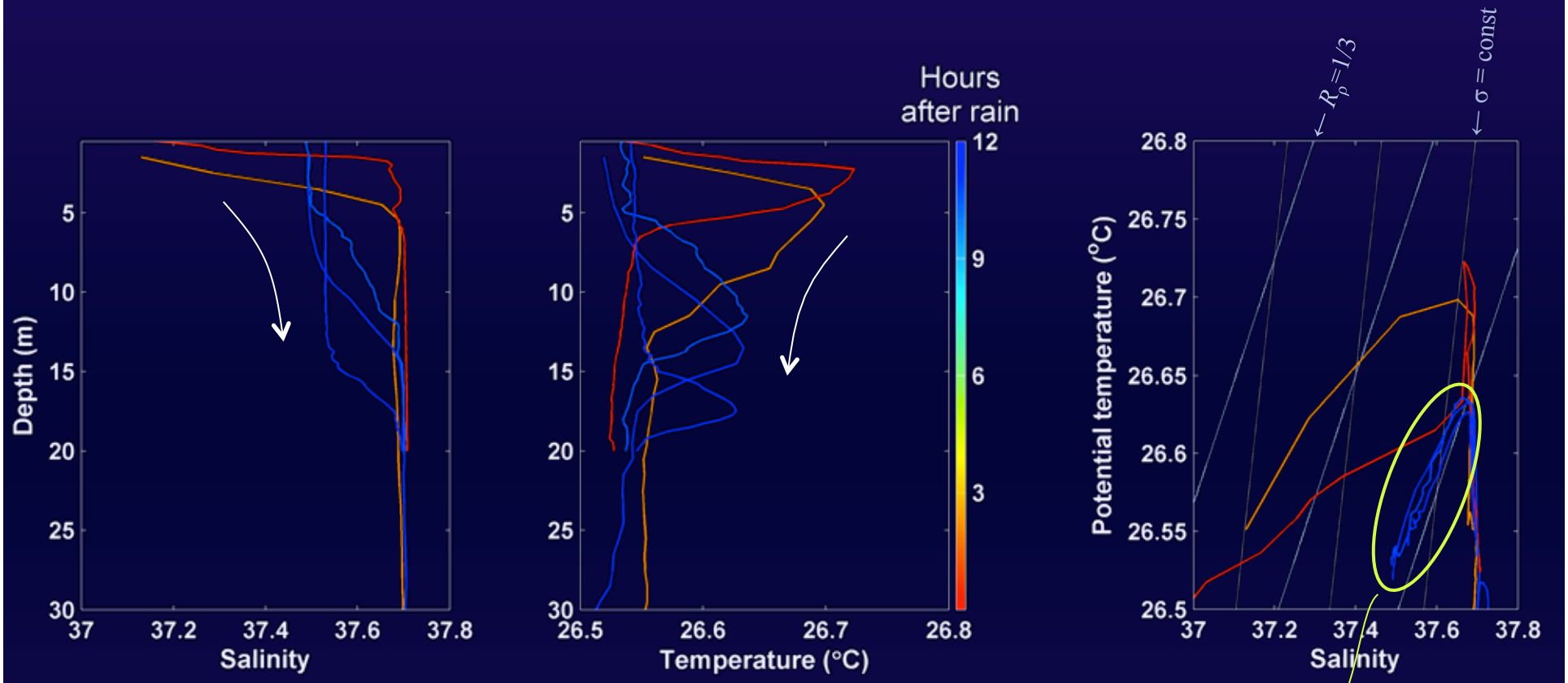


Another fresh pool?



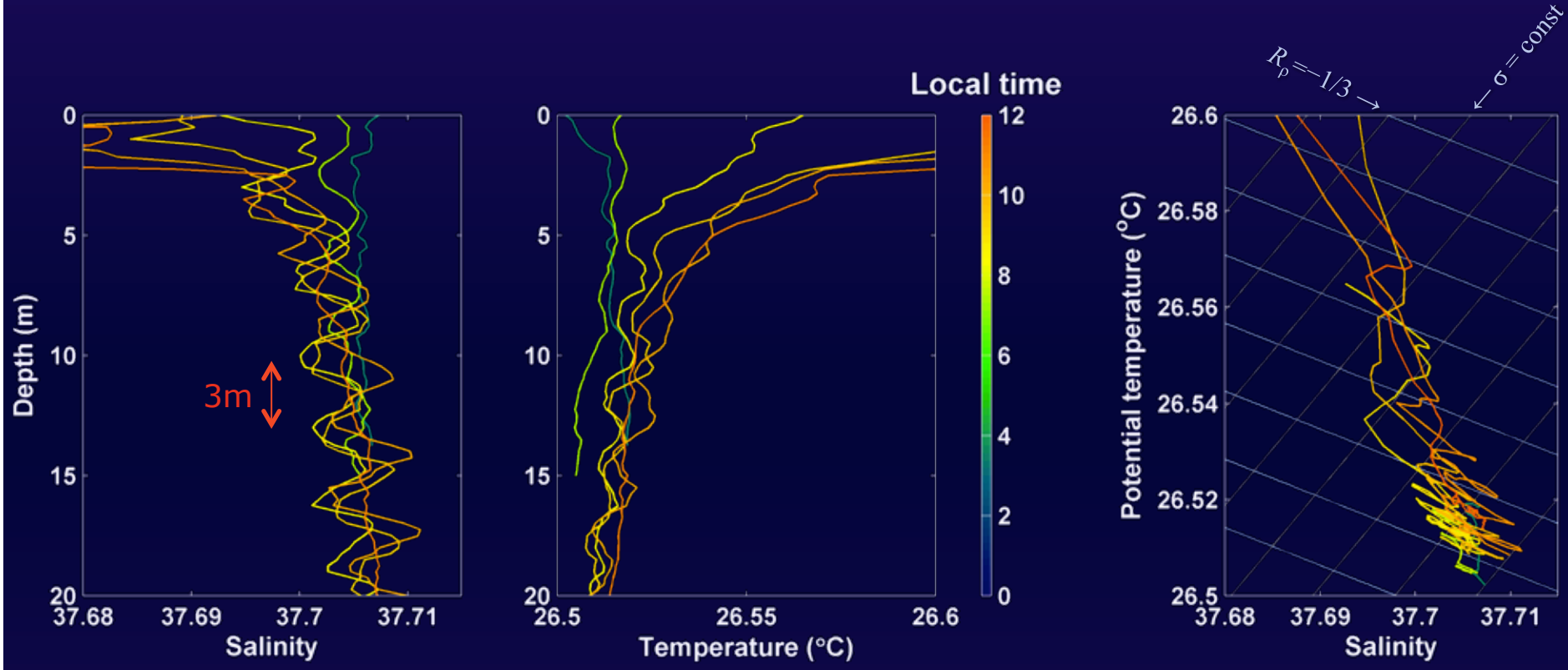
Warm rain ⇝ interesting TS

T_{max} is mixed downward. Diffusively-unstable regime above.



Thermohaline layers – evidence of DD?

Conditions: early morning, calm wind, light rain

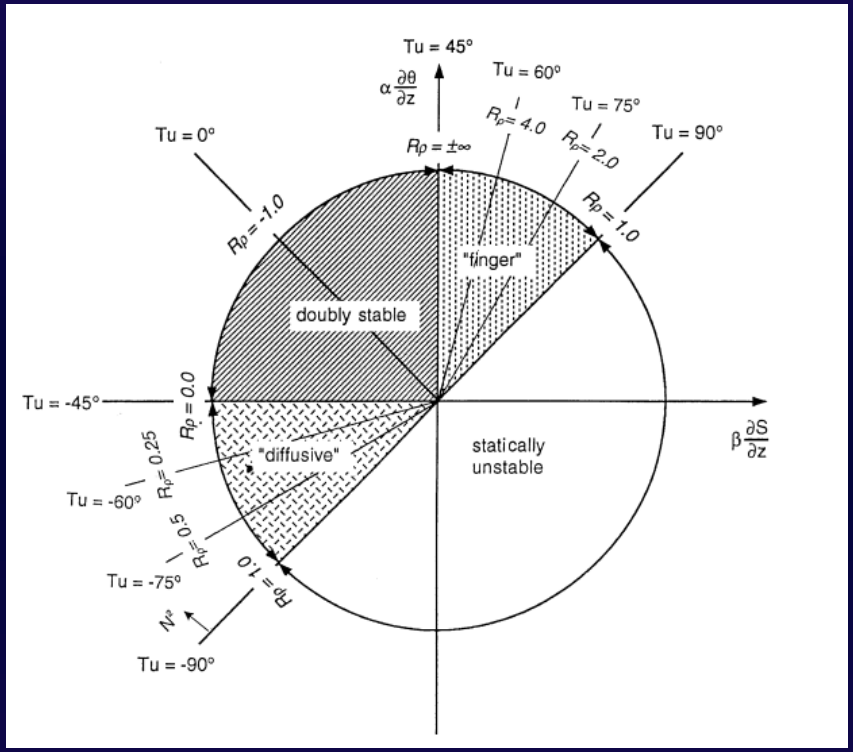


Not a single occurrence!

Looking for confirmation (profiling floats, wave- and seagliders…)

Density ratio & Turner angle diagram

You (2002), McDougall et al. (1998)



What will end the mission?

Comm. power:	November
Propulsion power:	July
Buoyancy:	June or later
Fish:	?

No need to recover until September

Next float will be deployed in March

Surface Salinity calibration